Acid phosphatase observed in the intramembranous system of the yeast-like phase of Paracoccidioides brasiliensis

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In the present study the principles of the Gomori technique (3) combining cytochemical and electron microscopical methods according to the procedure of Holt & Hicks (4), were applied to the yeast form of *Paracoccidioides brasiliensis* (Pb). The fixative and substrate were changed according to the methodology of Etherton and Botham (2) and following the procedure of Borgers (1) for dealing with yeast. The motive was to observe the secretory process of the acid phosphatase as an indicator of the intrinsic protein secretion, and in consequence, to attempt the demonstration of the endoplasmic reticulum and the Golgi apparatus of these cells.

The acid phosphatase spherical deposits are observed mostly in the matrical side of the plasmalemma. They seem to be more intense at 5 days culture. They are varied in size and opacity. The general structure of the fungi is preserved. The controls were negative and no activity was observed in the inhibition with sodium fluoride and tartatic acid 0.01 M.

We do not consider that we have demonstrated the endoplasma-reticulum and the Golgi apparatus with the acid phosphatase technique, but we are prone to think instead that the intramembranous structures of the fungi derivated from the internal phase of its plasma membrane are rich in one of the multiple forms or isoenzymes of the acid phosphatase (5).

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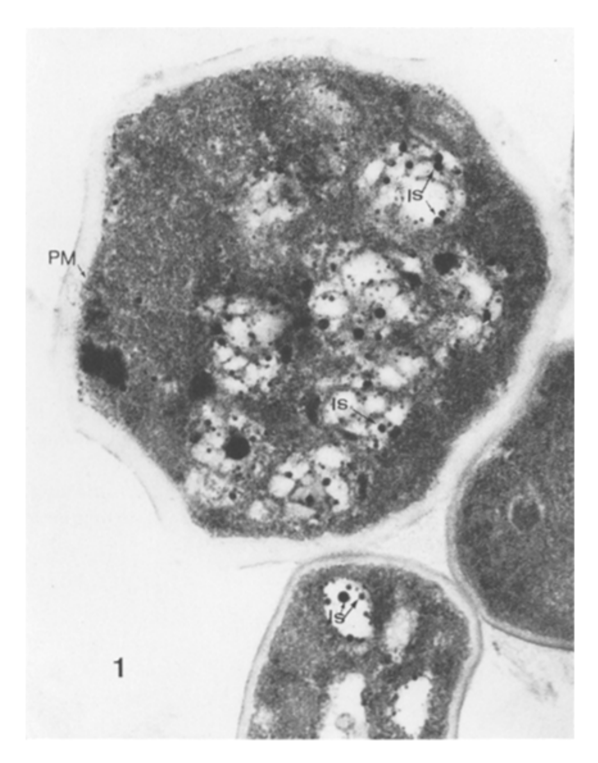
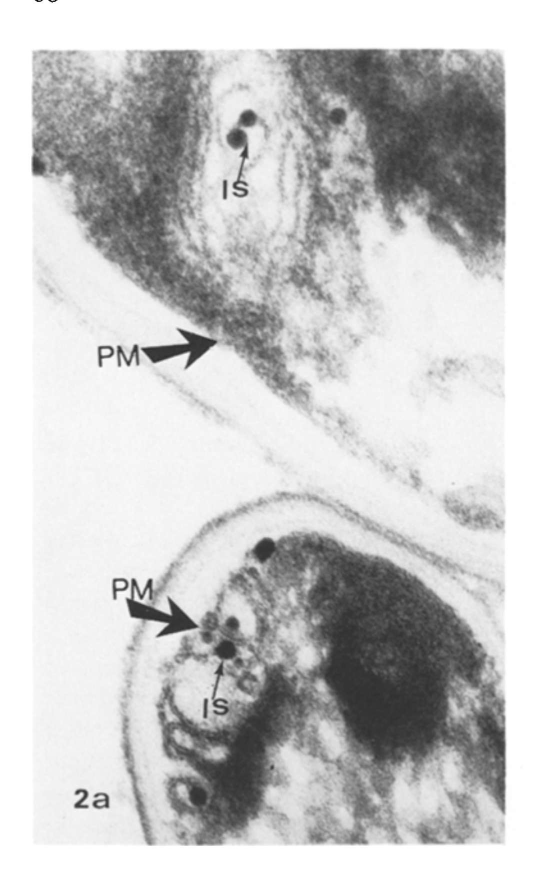


Fig. 1. P. brasiliensis. 5 days culture, yeast form. Spherical deposits of acid phosphatase of different sizes and densities are observed in the plasma membrane (PM) and in intramembranous structures (IS). 40 000×.

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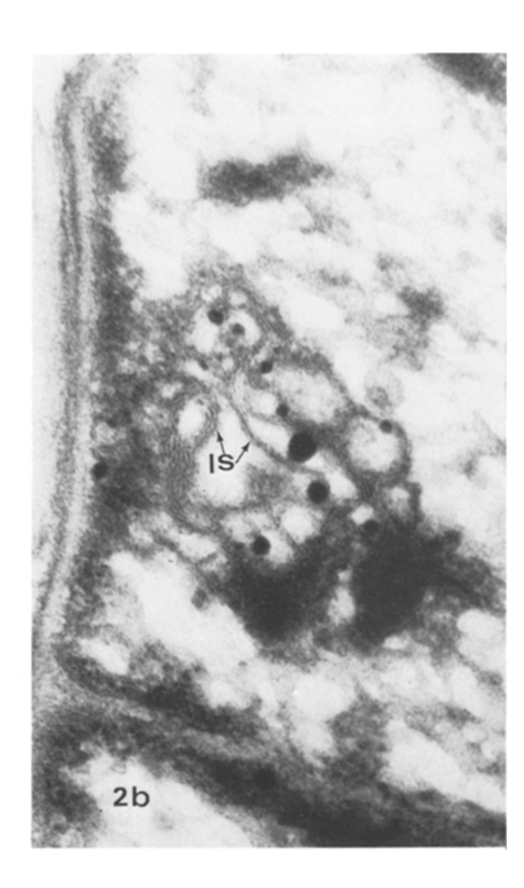


Fig. 2. P. brasiliensis. 5 days culture, yeast form. 2a. Intramembranous structures (IS) with deposits of acid phosphatase at 70 000X. 2b Intramembranous structures (IS) enlarged to 100 000X. The acid phosphatase are observed mostly at the matrical side of the membranes (arrows).

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